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MBA PROFESSIONAL REPORT

PROPOSING A RESEARCH METHODOLOGY TO EVALUATE THE RELATION BETWEEN TRAINING NEEDS ASSESSMENT AND EMPLOYEE PERFORMANCE

June 2016

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Training needs assessment (TNA) is utilized effectively as an evaluation tool by organizations in various countries to determine if training is the best solution to their problems. These organizations have benefited greatly by identifying the weak links and finding suitable solutions, thus optimizing their efficiency. The effectiveness and advantage of a TNA evaluation process, however, has been neither properly understood nor implemented in Arab culture. It is felt that organizations in countries like Bahrain have tremendous potential to enhance their efficiency and contribute more positively to the economic growth at the national level.

Therefore, an effort is being made to propose a research methodology to describe the degree to which TNA affects positive employee performance, specifically in Bahrain. Based on the proposed methodology, separate organizations in Bahrain could be surveyed later, by future researchers, to determine the comprehensiveness of their TNA and employee performance after training.

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ABSTRACT

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Therefore, an effort is being made to propose a research methodology to describe the degree to which TNA affects positive employee performance, specifically in Bahrain. Based on the proposed methodology, separate organizations in Bahrain could be surveyed later, by future researchers, to determine the comprehensiveness of their TNA and employee performance after training.

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LIST OF ACRONYMS AND ABBREVIATIONS

CBA	costs and benefits analysis
GSBPP	Graduate School of Business and Public Policy
HR	Human Resource
HRM	Human Resource Management
IRB	Institutional Review Board
LSA	Likert scale analysis
n.d.	no date
NPS	Naval Postgraduate School
TNA	training needs assessment

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EXECUTIVE SUMMARY

Training needs assessment (TNA) is one of the most essential aspects of the evaluation process to be considered by an organization before engaging in any kind of training activities because the training resources of companies are limited and these resources should only be used when necessary (Tao, Yeh, & Sun, 2006). According to Al-Khayyat (1998), "the importance of the TNA has long been established in literature, explaining why and how to carry out training activities and to know if training is indeed the best solution for the current problem" (p. 20). The assessment of training needs, however, can also vary (Chiu, Thompson, Mak, & Lo, 1999).

Wrong decisions brought by random assessment of training needs may lead to more cost and wasted time. A number of TNAs have been conducted and have ultimately assisted in enhancing the efficiency. Nonetheless, one has to be careful, as the same approach in different cultural settings may lead to quite a different outcome. The limited empirical support on the relationship between TNAs and positive employee productivity, especially in the Arab region, calls for more research. The proposed study argues the need to look into the relationship to determine if the TNA is an effective tool in improving employee productivity within the Arab region.

The purpose of the study is to propose a building block, a research methodology that can be carried over by future researchers to evaluate the degree to which TNA affects positive employee performance, specifically in Bahrain. The study design is quantitative in nature, investigating via statistical tools that propose a research methodology including a survey of different organizations in Bahrain. Future researchers can build on this study, conducting the survey and running statistical correlations to evaluate the degree to which TNA affects positive employee performance.

The survey questionnaire will be self-developed based on existing literature about TNA. To increase reliability, a pilot study could be conducted before the administration of the actual survey for better results. The purpose of the survey is to address the

respondents' perceptions, based on their experiences, of the impact of TNA on employee performance.

Contributing to the knowledge about the positive relationship between TNAs and employee performance may be consequential in the acceptance and implementation of TNA programs in Bahrain. Therefore, possible lack of support between the two variables may drive increased research on the subject to identify the current flaws of TNA systems and develop new ideas and models that may help improve the system. The research may identify if the TNAs of Bahraini organizations are well executed or not.

The final outcome of the study may also be significant to leadership, as the survey can identify the efficiency of leadership on TNA. Information on the behavior and perception of managers and employees on the impact of TNA on employee performance may reflect additional information on the capabilities of managers in handling TNAs.

Difficulties may arise when assessing whether organizations should use TNAs or not. Since training assessment is considered an important strategy in modern business operations, some organizations may say that they practice TNA even if they do not. Further, some organizations may state that TNA has contributed positively to employee performance even if it does not. To avoid such bias, employees should also be surveyed to determine if their responses are similar to the responses of the managers.

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I. INTRODUCTION

Training needs assessment (TNA) is one of the most essential aspects of the evaluation process to be considered by an organization before engaging in any kind of training activities because the training resources of companies are limited, and these resources should only be used when necessary (Tao, Yeh, & Sun, 2006). According to Al-Khayyat (1998), "The importance of the TNA has long been established in literature, explaining why and how to carry out training activities and in order to know if training is indeed the best solution for the current problem" (p. 20). The assessment of training needs, however, can also vary. Chiu, Thompson, Mak, and Lo (1999) stated that the assessment includes the supply-led, demand-led, process-led, and training-center approaches. A supply-led approach is mainly trainer-driven, stemming from the interests of trainers. A demand-led approach is business oriented, wherein the TNA is conducted because of the changing business environment and the need of the company to adapt to these changes. The process-led approach is process oriented, which can arise from internal departments. Finally, the trainer-centered approach is characterized by the self-development needs of the organization, usually for the needs of the employees and not for the business. Unfortunately, according to Chiu et al.'s (1999) study, 87% of TNAs were conducted out of supply-led reasoning, implying that it does not promise that real needs are identified properly. Thus, the effectiveness of the TNA on employee performance and the overall organizational performance is still questionable. According to Cekada (2010), the reasoning behind any TNA may be crucial to the program's success, but lack of such program alone can be enough to create costly problems for the company.

A. BACKGROUND

Training is important in every organization but several obstacles in implementation may arise that can lead to substandard outcomes (Van Eerde, Tang, & Talbot, 2008). Incorrect selection of employees as well as random assessment of their training needs may lead to wrong decisions that result in more cost and wasted time.

Schneier, Guthrie, and Olian (1988) stated several reasons why a TNA is necessary. They believed that TNA endorses a progression path for training, offers a database for future reference, and provides an empirical measurement for human resource management operations. Other important reasons stated by Brown (2002) include (1) specifying weaknesses in the organization, (2) acquiring management help and support, (3) improving data for evaluation, and (4) determining the pros and cons of training. More recently, Denby (2010) stated that the TNA can be important in gathering essential information. He reported that the subject company experienced a 56 percent increase in business productivity due to identified additional operational and cultural changes. Team members also felt empowered, comfortable, and confident. Because of training needs analysis, the need for sales training and workshops was identified.

There is a lot of literature that confirms the importance of TNA before engaging in any training activities (Anderson, 1994; Brown, 2002; Chen, Sok, & Sok, 2007; Dierdorff & Surface, 2007; Cekada, 2010). In contrast, Van Eerde et al. (2008) cited literature that found no correlation between productivity and TNA.

Kanan's (2005) study revealed negative relationship between TNAs and improvement in Palestine. The results of the study indicated that most of the superintendents selected for training were ill prepared and unqualified but were selected to maintain and uphold the status quo. Clarke (2003) revealed that politics within the organization can also significantly influence the results of TNA. The vulnerability of such programs to self-interest, conflict, and power relations may put the reliability and validity of data presented for training assessment into question.

The results of Clarke's (2003) study suggested the influence that culture might pose on the effectiveness of TNA. This can be especially true in the case of countries that have high collectivism ranking, as suggested by Hofstede and Hofstede (2001). A culture with high collectivism emphasizes networking, connections, family ties and other collective forms of behavior. Some forms of collectivist culture have individual names, specifically the Guanxi culture in China and the Wasta culture in the Arab world. As per Hutchings and Weir (2006), both Guanxi and Wasta put emphasis on personal ties, specifically when making business decisions and negotiations. A study by Al Bahar,

Peterson, and Taylor (1996) revealed that although companies in Bahrain are beginning to prioritize organizational rationales for training selection, social rationales are still a part of training selection assessment. Therefore, we choose to test the outcomes of our study in the context of Bahrain.

B. PROBLEM STATEMENT

TNA is necessary for the effective utilization of organizational resources. Despite the literature depicting the positive impact of such an approach, however, several still argue that the relationship between the two variables continues to lack empirical support (Salas & Cannon-Bower, 2001; Arthur, 2003). The case study conducted by Clarke (2003) also suggests that political factors may negatively influence training selection assessment. Political components such as self-interest of managers and power relations may affect decisions. Both components are basically rooted in culture. Kanan's (2005) study found that political elements negatively influence the training assessment and selection in Palestine. Furthermore, the study by Al Bahar et al. (1996) revealed that social rationales remain important factors for training selection in Bahrain. Both countries have high collectivism ranking and share the same culture as the rest of the countries in the Arab region.

A number of TNAs have been conducted and have ultimately assisted in enhancing efficiency. Nonetheless, one has to be careful as the same approach in different cultural settings may lead to quite a different outcome. The limited empirical support on the relationship between TNAs and positive employee productivity, especially in the Arab region, calls for more research. The proposed study argues the need to look into the relationship to determine if the TNA is an effective tool in improving employee productivity within the Arab region, specifically in Bahrain.

Owing to its steady economic growth, progressive competitive economy, and balanced strata of society, amidst strong cultural influences, we choose Bahrain for the purpose of the study. It will be very interesting to test the outcomes of the proposed study in a new challenging region that has both cultural influence and economic vision.

C. PURPOSE AND METHODOLOGY OF THE STUDY

The purpose of the study is to propose a building block, a research methodology that can be carried over by future researchers to evaluate the degree to which TNA affects positive employee performance, specifically as applies to Bahrain. The study design is quantitative in nature, investigation via statistical tools, proposing a research methodology that includes a survey of different organizations in Bahrain. Future researchers can build on this study, conduct the survey and run statistical correlation to evaluate the degree to which TNA affects positive employee performance. A dependent and independent variable will be set to be able to run a statistical relationship. The independent variable will be the TNA, and the dependent variable will be the employee productivity of those who will be selected for training through training assessment. As an outcome of this study, various managers and employees from different organizations in Bahrain could be surveyed as the respondents for the study.

The survey questionnaire will be self-developed based on existing literature about TNA. To increase reliability, a pilot study could be conducted before the administration of the actual survey for better feedback on the survey. The reasoning for the survey is to address the respondents' perceptions, based on their experiences, of the impact of TNA on employee performance.

D. SIGNIFICANCE OF THE STUDY

Contributing to the knowledge about the positive relationship between TNAs and employee performance may be consequential in the acceptance and implementation of TNA programs in Bahrain, owing to Wasta culture. On the contrary, possible lack of support between the two variables may drive increased research on the subject to identify the current flaws of TNA systems and develop new ideas and models that may help improve the system. The research may identify if the TNA of organizations in Bahrain are well executed or not. According to Cekada (2010), the benefits of well-executed TNA include

> increasing the commitment of management and potential participants to ongoing training and development; increasing the visibility of the training

> function; clarifying crucial organizational issues; providing for the best use of limited resources; providing program and design ideas; formulating strategies for how to proceed with training efforts. (p. 33)

The final outcome of the study may also be significant to leadership, as the survey can identify the efficiency of leadership on TNA. Information on the behavior and perception of managers and employees on the impact of TNA on employee performance may reflect additional information on the capabilities of managers in handling TNAs.

E. NATURE OF THE STUDY

The respondents to the proposed survey will be various managers and employees from two different organizations in Bahrain. They will respond to survey questionnaires and provide their perceptions on the following main topics: (1) the use of TNA before selecting respondents for training; (2) the perception of employees selected for training through TNA of their performance, whether they think that they have improved considerably or otherwise; and (3) the perception of the managers of whether the implementation of TNA has any effect on employee performance whatsoever.

The respondents are expected to provide demographic information and perceptions on specific statements in the survey questionnaire. The theory that justifies the research is that TNA can increase employee performance, as stated in various peer-reviewed articles (Anderson, 1994; Brown, 2002; Chen, Sok, & Sok, 2007; Dierdorff & Surface, 2008; Cekada, 2010; Van Eerde et al., 2008). The study will also take into consideration the political factors involving TNA and consider this as a factor in the effective implementation of TNA. The research also aims to consider culture as an intervening variable on possible negative impact of training selection needs on employee performance, as stated in the studies of Clarke (2003) and Kanan (2005). Thus, the research will also take into account the high collectivism culture of Arab nations as factors in the involvement of politics in TNA, which may lead to prioritizing social rationales over organizational and personal rationales in training assessment and selection (Al Bahar et al., 1996).

F. RESEARCH QUESTIONS

Following are the proposed research questions and possible corresponding hypotheses that might guide to the final quantitative study.

Question 1: To what extent does TNA lead to positive employee performance?

The following hypothesis and null hypothesis could be developed for the first question:

Hypothesis 1: TNA may lead to positive employee performance based on the testimonies of managers and employees from service organizations in Bahrain.

Null hypothesis 1: TNA does not lead to positive employee performance based on the testimonies of managers and employees from service organizations in Bahrain.

Question 2: To what extent are positive employee performance and the implementation of TNA significantly related?

The following hypothesis and null hypothesis could be developed for the second question:

Hypothesis 2: There is a relationship that exists between TNA and positive employee performance based on the testimonies of managers and employees from service organizations in Bahrain.

Null hypothesis 2: There is no relationship between TNA and positive employee performance based on the testimonies of managers and employees from service organizations in Bahrain.

G. THEORETICAL FRAMEWORK

The theoretical framework of the proposed study is rooted in employee motivation, perception on training effectiveness and the cause of positive employee performance. Positive employee performance has been attributed to both extrinsic and intrinsic factors, as explained in Herzberg's Two-Factor Theory and Deci's Cognitive Evaluation Theory. Herzberg (1959) introduced the two-factor theory of motivation, which consists of hygiene and motivation factors. Herzberg basically expanded Maslow's

theory by arguing that there are few motivating factors named as hygiene motivating factors, which can be explained as the motivating factors that do not encourage development or growth. For instance, many factors can motivate the employee to work—such as work environment, the hierarchy structure of supervision at work, and the financial benefits and bonds with work colleagues—but none of them offer any opportunities or chances for progress or development. The employee looking for development and growth will look for motivational factors such as achievement, development, responsibility and recognition, as explained by Ruthankoon and Ogunlana (2003) and Furnham, Eracleous, and Chamorro-Premuzic (2009). Achievement points to self-achievement or the desire to succeed on jobs or to solve impending problems. The opposite of achievement points to failure to solve problems, lack of progress in work, and schedule delays. Development, on the other hand, refers to advancement or possible growth in the company. This includes the possibility of being promoted, receiving training or learning new skills. Responsibility points to the extent to which a person or employee is given rational responsibilities, such as those within his or her reach or those that enable freedom to decide. Finally, recognition refers to praises from bosses or coworkers, or the acceptance of proposed ideas. Recognition is not met when employees experience blame or criticism, or when their ideas are overlooked or taken for granted.

Herzberg's Two-Factor theory inspired Deci's Cognitive Evaluation theory, which also stresses that manners and behavior of the person are influenced by the intrinsic and extrinsic motivation. Intrinsic motivation is synonymous with Herzberg's motivator factors, while extrinsic motivation is synonymous with his hygiene factors. According to the theory, intrinsic drive is related to accomplishments such as personal interest or achievements and the satisfaction of the employer's goals. Extrinsic motivation, on the other hand, is driven by the employee's financial needs such as salary and other financial rewards. Intrinsic motivation comes from a need for independence, while extrinsic motivation stems from the quest for a goal or consequence of an action or activity. Deci (1971) explained that, in order to survive, human beings need *competence* and self-determination. Most people have an innate desire to search for situations that will challenge them to a certain extent. Thus, a person wants intrinsic values to feel

knowledgeable and capable to do the work as well as being self-determining. Achievement of intrinsic values depends on the person's extrinsic satisfaction, however. Thus, in order to maintain the motivational factors at a steady level, it is imperative to fulfill both the employee's intrinsic and extrinsic values.

Based on the Two-Factor theory and the Cognitive Evaluation theory (Herzberg, 1959; Deci, 1971), motivation can be an important factor in making employees achieve goals and results. Motivation is "an internal psychological state that stimulates a person to engage in a particular behavior and is central to the explanation of individuals' conscious choices among different alternatives" (Jaramillo, Locander, Spector, & Harris, 2007, p. 60). According to Jaramillo et al. (2007), intrinsic motivation can affect, to some extent, the performance and productivity of employees. Originally, their theory pointed out that the initiative of a person can have a moderating role on the effect of intrinsic motivation on objective job performance. Their theory, however, also explains that intrinsic motivation can affect the adaptive selling of the salesperson, which in turn, can lead to objective job performance. Their research on more than 600 respondents found support for the theory, and also confirms the moderating role of initiative. Brecher (2007) stated that motivation, aside from the ability of the employees and the environment they are working in, is an important factor in pinpointing poor employee performance. Lack of motivation can basically lead to poor performance over time, even if the individual has the sufficient ability to perform the job.

According to Edwards et al. (2008), job performance consists of two important factors: task performance and contextual performance. Task performance encompasses those events that are prearranged, separate jobs one from another, and add to the technical core of the organization. On the other hand, factors contributing to the social and psychological core of the organization are the activities that support the wider organizational, psychological and social environment where the technical core runs. Different motivational factors may be necessary for each job performance factor. For instance, Edwards explained that specific relationships may exist in facets of job satisfaction and job performance scopes. Satisfaction in work, promotion, and pay may lead to positive task performance, whereas supervisor and co-worker satisfaction may

lead to positive contextual performance. Theoretically, TNA may lead to positive employee performance because the employee could feel a sense of satisfaction at being selected for training. The employee may feel a sense of importance because the supervisor was aware of that employee's needs for skill enhancement.

Theories of culture may also contribute to the theoretical framework of the current study. According to Hofstede and Hofstede's (2001) and Smith, Dugan, and Trompenaars (1996) universalism vs particularism, high collectivism, high masculinity, and a high regard for universal principles characterize Arab societies. Using these dimensions, the prevalent practice of Wasta and patriarchy in the Arab culture is explained. Because of the prevalence of high collectivism, high masculinity, and a high regard for universal principles in the Arab culture, universalism and particularism are universal values that complement the concept of the importance of in-groups and social norms. According to Sidani and Thornberry (2010), some studies contain explanations of these characteristics in societies in which Wasta and patriarchy dominate in the Arab world. In regard to TNA, Al Bahar et al. (1996) found that social rationale factors or social pressures are the second most important rationales for employee training selection in Bahrain. Despite the positive relationship between TNA and performance, social rationale factors prevalent in the Arab world may intervene in the relationship and may affect the result.

H. SCOPE AND LIMITATIONS

The following four main limitations are anticipated in the proposed study:

1. Difficulty of obtaining cooperation from organizations such as government departments or private companies since TNAs can be considered confidential
2. Conflicting schedules
3. Employee turnover
4. Limited time frame of the study

Difficulties may arise in the inquiry on whether the organizations use TNA or not. Since training assessment is considered an important strategy in modern business operations, some organizations may say that they practice TNA even if they do not.

Further, some organizations may state that TNA has contributed positively to employee performance even if it does not. To avoid such bias, employees should also be surveyed to determine if their responses are significant to the responses of the managers.

I. SUMMARY

The purpose of the study is to design a research methodology to evaluate the degree to which TNA affects positive employee performance, specifically in the context of Bahrain. The background of the problem discussed how TNA can affect performance either positively or negatively. Several studies confirmed the positive impact of TNA; the study of Al Bahar et al. (1996), however, suggested that the Arab culture may intervene in its effectiveness as decisions are sometimes made with social rationale factors. Two research questions will be explored in the study, focusing on the degree to which TNA may lead to positive performance and the extent to which the two variables are significantly related.

II. LITERATURE REVIEW

The study is aimed at proposing a research methodology to evaluate the degree to which a TNA affects employee performance, specifically in the context of Bahrain. The literature review that follows explains the theories and presents cases that relate to the subject.

A. TNA—DEFINITIONS

Two selected definitions give the wholesome understanding of the TNA process. Per Rossett (1987),

> TNA is an umbrella phrase that encompasses activities like analysis, front end analysis, needs assessment and needs analysis, etc. TNA is a systematic study of problems or innovation, incorporating data and opinions from varied sources, in order to make effective decisions or recommendations about what should happen next. Sometimes those recommendations involve training and sometimes they do not. (p. 3)

Per Denby (2010), the importance of TNA is "a methodical investigation and analysis into an organization's current and desired performance levels, focusing heavily on the ability of its staff and their support network" (p. 148).

B. TNA—OBJECTIVES

Most organizations aim to take all necessary measures to enhance their productivity and efficiency. Those organizations that excel in respective fields are better than their competitors in identifying the problem areas and taking prompt action to rectify those problems.

Bowman and Wilson (2008) concluded that the central objective of a TNA is to meet business needs, and their assessment is conducted to gain knowledge and then to move forward with confidence with a specific project. Individually, however, one may desire to acquire expertise in a specific field—different from others—and not predominantly possess or display the same kind of attitude expected by any organization. Thus, an organization may potentially have to consider multiple sets of needs. Successful

TNA programs need clear communication, clear processes, and good decision-making practices. Access to information should not be limited to HR personnel as this might increase distrust throughout the process, toward the people who conduct the TNA. Such practices might also reduce the possibility of cooperation in future TNA programs.

C. TNA—MODELS

TNA is a process and its application in letter and spirit can help in achieving desired results. Out of different models, two similar TNA models are selected and elucidated below to explain the process and outcomes more explicitly.

Thomas J. DiLauro (1979), in his model "A Need for Assessment Model," explained the process of conducting TNA. The process involves six steps: (1) determine purpose, (2) identify data needed, (3) design data gathering approach, (4) gather data, (5) analyze and verify data, and (6) set training priorities. The data can identify various discrepancies in training selection decisions, as it compares the actual level of performance of the personnel with the present desired level of performance and projected desired level of performance. This data can also distinguish immediate training needs from long-term training needs.

Schneier, Guthrie, and Olian (1988) presented a similar model in "Training and Development Process Model." In their model, assessment is at the forefront, followed by design, and then evaluation. The assessment phase involves delineating and identifying job tasks, knowledge, abilities, skills, and other characteristics of the employee. The design phase involves designing the internal and external programs based on the assessment findings. Finally, the evaluation phase involves monitoring and evaluating organizational and individual performance. They also emphasized that TNAs were a foundation for personnel and HRM activities. The model also explained that results gathered from TNA activities can be used for (1) planning and managing careers, (2) writing job position descriptions and specifications, (3) developing performance appraisal criteria and standards, (4) making compensation decisions, (5) recruiting and selecting employees, and (6) determining training and development program content and meeting standard goals and requirements (p. 193).

D. TNA—INFLUENCES

Within an organization, quite a few factors contribute to the overall working environment. These include individuals, managers, skill levels, mutual relationships, individual performances, etc. In order to accrue maximum benefit from TNA, organizations may have to adapt.

1. Self-Efficiency and Skill Proficiency

A number of studies have confirmed the impact of HR interventions on organizational performance (Van Eerde et al., 2008). The effect of TNA on performance, however, is less studied as compared to analyzing the effect of training itself on performance. Basically, TNA may affect the end result of the training, as only qualified employees are selected for training. The training needs of employees may depend on their levels of work experience, self-efficacy, and skill proficiency. By surveying 202 respondents from U.S. Special Operations Forces, Dierdorff and Surface (2007) investigated the impact of these elements on subsequent training needs rating and found that self-efficacy and skill proficiency were important.

2. Training Utility

The study of Van Eerde et al. (2008) initially found a significant positive relationship ($r = .43$, $p < .01$) between TNA comprehensiveness and organization effectiveness. Moreover, TNA comprehensiveness was also significantly and positively related to training utility ($r = .47$, $p < .01$). Other factors such as training quantity and organizational size, however, were not significantly correlated with training need assessment comprehensiveness. The results reinforced the study's conceptual model that TNA comprehensiveness can lead to perceived utility of training and then lead to organizational effectiveness.

3. Cultural Change

The case study conducted by Holton, Bates, and Naquin (2000) on TNA methodology implementation revealed that implementation of TNA programs requires culture change. Organizations must be fully prepared, which can be achieved by creating

a performance-oriented culture prior to the implementation of the needs assessment program. In other words, the environment within the organization should be supportive of needs assessment processes. Other problems that organizations might experience in the implementation include difficulty in identifying strategic goals; lack of experience, which may result in difficulty articulating the goals for need assessment; failure to inform the employees about the project; and lack of management and staff commitment. Holton et al.'s (2000) case study results implied that implementation of TNA is not always successful, specifically when it involves one or more of the problems mentioned. The effectiveness of a TNA program depends on the preparedness and dedication of the company.

4. Understanding of Training Needs

Patton and Pratt's case study explored the training needs of high-potential managers and found that TNA can provide plenty of information that may contribute to the identification of their training needs. The participants provided insights on the needs of upcoming managers and also recommended the best practices for future management training programs. Through the training assessment, the organization found that managers wanted training that is more appropriate to their present and impending work requirements. Overall, Patton and Pratt (2002) emphasized that the TNA accomplished the following:

1. The solicitation of opinions from relevant stakeholders regarding the current condition of management training in the state and the optimal plan for providing a comprehensive training program
2. Development of a synergetic process to compound the generation of ideas and recommendations for the curriculum and logistics of the proposed program
3. A prioritized list of training topics according to various ways of considering training needs
4. Informing dozens of influential agency directors, bureau chiefs, and managers about the state's intention to provide a large-scale management training program
5. Developing support from many of these managers through participation in the planning and development process (p. 482)

E. TNA—OUTCOMES

Random training selection processes and training programs may not yield desired results for any organization.

1. Training Selection Errors

A TNA can potentially prevent training selection errors. Training selection errors may negatively impact employee behavior toward the organization, since they may feel dissatisfied with their current status. Branham (2005) offered reasons why an employee would feel unsatisfied and permanently leave the company. First, the training given to an employee or the workplace where the employee is assigned may not be what the employee has expected. This may be due to a supervisor giving unrealistic expectations to the employee beforehand. It is important that the employer accurately specify what is in store for the employee, maintain expectations, and keep promises no matter how small or large they are. Second, there may be a potential mismatch between the job and the person. When this happens, employees may feel bored, out of place, unchallenged or incapable of being productive. Third, a potential lack of support from management can result in minimal coaching and feedback for employees. Nonperformance problems in business generally occur because leaders or managers fail to give coaching sessions and constructive feedback to employees. Fourth, qualified employees who were not selected for training may feel that they have limited growth and advancement opportunities. They might feel they are being locked in a position for a prolonged period of time, without any indication that they can advance to a higher position. These employees may notice the organization's poor selection system, favoritism or connections in promotions, which may lower their motivation and job satisfaction. Fifth, employees who deserved training but were not selected may feel devalued and unrecognized. Such employees may feel that managers do not listen or do not recognize their achievements. Haphazard implementation of training may lead to loss of trust and confidence in the organization.

2. Effective Training Program

Brown's (2002) article on TNA explained and argued its importance in an effective training program. TNA can determine the costs and benefits analysis (CBA) of

training, which can lead to positive performance as the organization can carefully plan its next step and avoid random decisions. The organization can acquire valuable data and carry out analysis to assess the advantages and disadvantages of conducting the training. TNA can also influence management support, which is necessary for a successful training program. Leadership and management support are both important in the planning and implementation stage of any project. TNA can basically offer data that will be extremely useful in the designation of roles and convincing the top management to participate and get heavily involved in the training program. In short, TNA can prepare the organization for the upcoming challenge of training program implementation.

F. TNA—JUSTIFICATION

A manager of any organization would like to know if that organization is performing to its potential and capacity and is efficient. If not, where is the problem and what is the remedy?

1. Appropriate Solution

A TNA can assist a company in determining if training is the most appropriate solution for an organizational problem, as well as determining the employees who are qualified for training (Dierdorff & Surface, 2008). A TNA can inform the company of focus areas and specific problems to solve. The assessment is done by gathering essential information for analysis and developing a training plan. Research may explore the company's optimal performance and knowledge, current performance and knowledge, behavior of employees toward the current situation and causes of and solutions to the problem. The advantage of using a TNA is to increase the knowledge of the company with respect to its current needs and prepare it to develop its strategic approaches (Cekada, 2010; Dierdorff & Surface, 2008).

2. Importance of Proper Approach

Denby's (2010) case study on the TNA implementation of Moorhouse Insurance reinforced the importance of proper approach. The company was well equipped and prepared, which as a result, gained them the following benefits: gained productivity of 56

percent after making the necessary improvements recommended by the team, identified additional operational and cultural changes leading to 56 percent increase in productivity, and received positive feedback from those attending the program.

G. CONSEQUENCES OF NOT USING TNA

It is important for any successful organization to understand how well they are utilizing their resources. Is there any misuse of resources? If yes, where is it and how can it be best identified and rectified?

1. Misuse of Training Resources

Cekada (2010) stated that the importance and advantages of TNA have been researched, defended and confirmed in various literature. He argued that the misuse of training resources, due to the random selection of employees and implementation of training, may lead to wasted resources and negative performance results. Misuse of training resources involves excessive and unnecessary training of employees, who may be either unqualified or overqualified for training.

2. Weak Training Program

Agnaia (1996), in his study about the managers in different companies in Libya, explored the processes involved to access their training needs as well as selection and found that a haphazard training system may lead to weak training programs. A weak training program is characterized by (1) not being based on identified needs, which have led to difficulties in evaluating these programs and (2) economic, political and social constraints. The findings of Agnaia's study revealed the following difficulties faced by Libyan managers in training selection:

1. Insufficient or unclear procedures that organize company training activities
2. Lack of enough managerial autonomy in decision making
3. Difficulty in gaining agreement from government agencies about sending employees abroad for training
4. Instability of administrative staff and organizational structure

5. Lack of co-operation from top management regarding training activities, especially in matters of facilities, motivation and financial support

6. Lack of co-operation from other company departments

7. Unclear identification of training needs as a result of social environment factors

8. Employee indifference about training in many of its aspects, such as providing information and supporting department policies

9. Shortage of qualified managers throughout company and especially in key departments

10. Economic embargo that limits options

11. Lack of coordination between managers and trainees (p. 47)

III. RESEARCH METHOD

Although previous research has established that training needs assessment can have a positive impact on productivity, the cultural and political elements usually present in such activity may significantly affect the end result. This section will discuss the possible quantitative method that can be conducted to reach the final results of this study, selection of samples, use of the survey instrument, and how to conduct data analysis for such a study involving the possible responses of managers and employees to questions that inquire on the effectiveness of training needs assessment.

A. RESEARCH METHODOLOGY

Quantitative research is the proposed research method, due to accuracy of results, greater objectivity, and the ability to provide summaries of data. Qualitative methods usually collect words to surface patterns that lead to something that the researchers are looking for. Given (2008) explained in his literature the differences between the quantitative and qualitative methods and their means of use.

Quantitative research characterizes the development of the study. DiLauro (1979), Creswell (2012) and *Manual on Training Needs Assessment* (n.d.) all emphasized the requirement to follow a process while conducting TNA. The process (Figure 1) starts with identifying the topic of the study followed by specific steps, explained in the ensuing paragraph.

The first step is to *identify problem needs*—which determine the goal, roles and responsibilities—while also performing gap analysis and setting of objectives. The second step is the *design* of the training needs assessment, which will determine the target group to be trained, who will be interviewed, the methods of the design and the schedule. The third step is the *data collection* where the actual information regarding the needs or the improvement can be collected by interviewing or surveying people as well as building the questionnaire and surveys. The final two steps are the data *analysis* and *feedback*. The analysis step allows the researcher to select the qualitative or quantitative

method and draw finding conclusions and recommendations on training contents (*Manual on Training Needs Assessment,* n.d.).

Figure 1. Training Needs Assessment Process Model

B. APPROPRIATENESS OF THE DESIGN

A quantitative research method is suitable for the anticipated research due to the need to test the proposed hypotheses, address the research problems, and test the possible outcomes of what, where, why, how and when. Different survey instruments could be used to test these hypotheses at the end of the study. For our proposed study, we have selected the Training Needs Analysis Comprehensive Scale (Van Eerde et al., 2008) and our self-designed Employee Performance Questionnaire. The first questionnaire should inquire on the training needs analysis comprehensiveness of the organizations. We have selected the TNA Comprehensiveness Scale because of its success in the past in testing the decisions made on training prior to the actual training. Specifically, the scale statements should inquire regarding the following: assessment of problems before considering training, review of job description of employees before deciding to select them for training, link of training to the strategic plan of the organization, deciding on the required competency level beforehand, determining the skill needed for the employee to perform his work effectively, ranking the job-related capability requirements based on importance, and assessing employee competency levels before finalizing what training the employees should be enrolled in.

The second questionnaire should be an Employee Performance Questionnaire inquiring about the effects of the training needs assessment program on the employees involved. The employees will be asked their thoughts about the program, on how the training improved their skills, what they have learned, what they have not learned, and

other important issues that may help to evaluate the effect of TNA on employee performance.

C. POPULATION AND SAMPLING

The target population of the proposed study could be any organization in Bahrain. Two or more governmental departments or private companies may be selected to participate in the study. For instance, the Human Resource directors or managers of each organization will be asked to conduct surveys on managers and employees.

For the sampling purpose, we could use the systematic approach, which is a type of random sampling as explained by Creswell (2012) that can be used to sample the participants for the study or any other sampling method preferred by the future researchers to carry on with the study. The systematic approach is a slight variation of a simple random procedure, which means selecting every *k*th person in the population until the desired sample size occurs. The advantage of a systematic random sampling design for the proposed study is the convenience of selecting the individuals without the restraints of numbering. Using the systematic approach procedure, each random variable in the sampling space of the population has an identical probability of being selected.

D. DATA COLLECTION

Data collection is an important part of the training needs assessment. There are many different ways to perform data collections, and training needs are optimized when a combination of methods is used to analyze the data. It is essential to consider the chosen data collection method based on the reliability, validity, and trust of the data (*Manual on Training Needs Assessment,* n.d.).

The hypotheses involve data demographics, the training needs assessment comprehension of the organization, and the performance improvement of the employees. The manager respondents are expected to provide insights on the training needs assessment comprehension of their respective organizations, while the employees are expected to provide their perceptions on how their performances improved after being selected for training. Researchers have established that training needs assessment can

provide many benefits to the organization (Anderson, 1994; Brown, 2002; Chen, Sok, & Sok, 2007; Dierdorff & Surface, 2008; Cekada, 2010; Van Eerde et al., 2008). Al Bahar et al. (1996) and Clarke (2003), however, stated that training needs assessment is not immune to outside influences such as politics and culture, which implies that outcomes of training needs assessment can be influenced by the organization's culture and politics.

A self-administered survey can be used because of its advantages, such as low cost and timely collection of data. Further, personal self-administration may also involve a more effective relevant context for the participants compared to a telephone-survey administration. The self-administration procedure will encourage the trainee-participants to be more spontaneous and may prompt more honest responses from them than compared to email surveys (Creswell, 2012).

E. DATA ANALYSIS

Data analysis can be conducted using any statistical tool available, and we propose using Microsoft Excel. Automatic descriptive analysis using the Microsoft Excel software includes statistical descriptive details about the mean values, variance from the mean, standard deviation, percentages and other important descriptive statistics. Microsoft Excel software will also show cross-tabulation of data for better comparison.

Both instruments, the TNA Comprehension Scale and the Employee Performance Survey, will require 5-point Likert scale analysis (LSA). The LSA is a psychometric scale normally used in research employing questionnaires (Maurer & Pierce, 1998). The purpose of the LSA is to measure the degree of agreement with the statement in regard to the respondent. In the design for this proposed study, a scale of 1 to 5 will measure each statement. The scales are 1 (*strongly disagree*), 2 (*disagree*), 3 (*not sure*), 4 (*agree*), and 5 (*strongly agree*). LSA is appropriate for the analysis of the instruments because of the success experienced by previous studies, specifically the study of Van Eerde et al. (2008) and Al Bahar et al. (1996).

Analyzing the LSA results using the Microsoft Excel tool will yield results on mean values, frequencies, and percentages distributive values. The descriptive procedures in Microsoft Excel will show means (μ) and standard deviations (Std or Sigma) for the

variables and the minimum and maximum values. Weighted average means are important in LSA because the coded numbers can show the directionality of the average answer. In addition, the standard deviation results can show the average distance from the mean. High standard deviations refer to multi-variation in the answers.

According to Creswell (2012), the LSA can also show comparisons between groups using a *t* test analysis or a chi-square analysis. Because the *t* test is applicable only in small numbers of respondents (small sample size or small n), the alternative chi-square analysis will show results between groups. The chi-square (X^2) is used to test between different categories that might have a relationship somehow and explain how they might differ from each other. Further, the chi-square statistic is more scientifically valid than the *t* test because of its discrete distribution.

The Microsoft Excel software program will show the count, the expected count, the row percent, the column percent, and the residual. The number of cells should have an expected frequency of five or more, and frequencies of less than five are not statistically valid. A non-parametric test such as the chi-square is appropriate because of its ability to show results of multinomial experiments like the LSA, which has five variables or scales (Creswell, 2012).

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IV. TEMPLATE DESIGN

Chapter IV presents the reasoning behind the proposed process and possible results of templates and statistical data. We recommend conducting a pilot study with *n* number of employees from a separate organization to test the validity of proposed surveys. Furthermore, a detailed analysis of an *n* number of managers and *n* number of employees from two different organizations in Bahrain could be our random sample for this study that will help future researchers. The chapter is divided into four sections: (a) testing the proposed strategy (Pilot Study), (b) communication process, (c) data collection procedures and survey questionnaire, and (d) data analysis. Summary and conclusions will be covered in the last chapter.

A. PILOT STUDY PROCESS

A pilot study is a preliminary study or a smaller version of the main study that is useful to evaluate and test the procedures and questionnaires by collecting data from the participants in an attempt to improve upon the study design prior to its conduct. Pilot studies are useful to identify the weaknesses of the design of the research main body and should follow the same method of the data collection for the main study (Hulley, Cummings, Browner, Grady, & Newman, 2013). Pilot studies are effective because they provide an acceptance and confirmation for the procedures to be used in the survey questions and ensure that the questionnaire is appropriate for the research before it is conducted.

In our proposed study, a total of *n* number of managers will be contacted for the first questionnaire TNA comprehensive scale, and *n* number of employees for the second survey will be our random samples from the population space. We will draw our population sample from two different organizations in Bahrain. The communication process between the researchers and the organizations will be established, and each organization will be contacted through the official channel. Upon agreement, the questionnaires shall be sent through the communication channel selected, by email or

post, to the respective HR departments, which would distribute the questionnaires to the specific respondents that will act as our data samples.

The pilot study will assist in determining whether all the selected statements on the TNA Comprehension Scale and the statements on the Employee Performance questionnaire are clear, self-explanatory, and well-understood by the respondents before the final survey takes place. The two surveys can be modified by the future researchers to better reflect the purpose of the study and to simplify the statements so that the respondents can understand each statement clearly. Taking into consideration that English is not the first language in Bahrain, it is especially important to determine whether the statements need further improvement. According to Creswell (2012), developing statements that can be clearly understood by each respondent is one of the keys to better research. The pilot study respondents will be asked to read the Consent Form to ask questions and to provide feedback throughout the pilot survey process. Basically, the changes and adjustments can be made in the questionnaire based on the feedback of the pilot respondents.

B. COMMUNICATION METHODS

Different types of communications are available to communicate with the targeted audience, and each has its own advantages and disadvantages. *Conducting Survey Research* (1999) explained the type of methods available for use by researchers (Table 1). These include (1) face-to-face interviews, (2) telephone interviews, and (3) mailed questionnaire as well as some other more recent ways that can be adopted to conduct the surveys or the questionnaires that use some advanced technology like video conferencing applications via the Internet.

The face-to-face interviews usually result in a higher response rate, but the cost per interview is expensive. The mail has less administrative cost, but it is not very speedy and time may elapse before receiving the completed questionnaires. The telephone interviews are good to obtain results quickly; sometime, however, it can be difficult to reach the selected residents' households.

Table 1. Advantages and Disadvantages of the Communication Methods

Method	Advantages	Disadvantages
Face-to-face	• Interviewers can document characteristics of non-respondents and reasons for refusal. • Usually results in a higher response rate. • Preferable for survey addressing complex issues where some explanation may be needed. • Reduces non-response by individual questionnaire items	• A social desirability bias may affect the accuracy of responses, especially when survey is addressing sensitive issues. • Recruitment and training of interviewers is time consuming and expensive. • Cost per interview is expensive.
Mail	• Social desirability bias is minimized. • Administrative costs and costs per respondent are significantly reduced.	• It is often not possible to determine the demographics and characteristics of non-respondents and/or reasons for refusal. • Some questions may not be complete on returned questionnaires. • The time elapsed before receiving completed questionnaires can be long (1–3 months).
Telephone	• It is possible to achieve high response rates. • Interviewers are able to document characteristics of non-respondents and reasons for refusal. • The amount of non-response to questionnaire items can be minimized. • Able to obtain results quickly • Less costly than face-to-face interviews (but more expensive than mail surveys).	• It is sometimes difficult to reach a selected resident of a household. • Long and/or complex questions should be avoided, as it is difficult for respondents to retain the questions and response categories.

Source: Conducting Survey Research (1999).

Notwithstanding the methods of communication discussed above, we prefer an Internet-based communication (email, video conference, etc.) as our preferred method of communication for the proposed study. Email will be appropriate due to factors like the presence of targeted population in different regions, easy-to-maintain records and no associated cost, which makes it the best way to communicate for this proposed study.

1. Wording Emails

The first step to write the proper email to be distributed to different organizations in Bahrain is to determine if there are any existing email templates available from open sources that are well designed and worded to be used. *Conducting Survey Research* (1999) stated that quality wording and well-constructed sentences that contain useful information help motivate the reader and keep the respondent interested.

In the construction of the email content to be sent out for our target population in our proposed study, it is necessary to invite the participant in a polite way to participate in the survey questionnaire and explain the reason behind the proposed study, stating that the final outcome of this study could improve their experience at respective organizations. Furthermore, it is important to state that the information received from the participants would be confidential, and let them know that there are no penalties if they decide not to participate.

C. THE SURVEY QUESTIONNAIRES

Different survey methods could be used to test hypotheses. For our proposed study, we have chosen to use the survey questionnaire method. The first questionnaire is based on the previously used TNA Comprehensive Scale (Van Eerde, Tang, & Talbot, 2008), which showed positive results, and the second survey questionnaire is a self-designed Employee Performance Questionnaire.

1. Draft Questionnaires

The TNA Comprehensive Scale questionnaire is based on the literature review. It should inquire on the training needs analysis comprehensiveness of the organizations that the managers work for. We have selected the TNA Comprehensiveness Scale because of

its success in the past in testing the decisions made on training prior to the actual training. Specifically as described by Van Eerde, Tang, and Talbot (2008), the scale statements inquired about the following:

1. Before conducting training, we carefully assessed if the problem could have been somewhere else (such as work environment, the tools, reward systems).
2. The job description of the employee's job was reviewed prior to deciding on the training program to be undertaken by the employee.
3. Training was continuously linked to the company's strategic plans.
4. We decided on the desired competency level we expected an employee to reach after training.
5. We determined the knowledge, skills, and attitudes an employee must have in order to perform the job successfully.
6. The job-related competency requirements were ranked according to their importance.
7. The current skill/competency level of employees was assessed prior to deciding on the training program to be undertaken by the employee (p. 73).

Respondents' information in terms of name, age, gender, level of education, and date of employment could be used at the top of the questionnaire for further statistical analysis later in the study.

The second draft questionnaire is a self-designed Employee Performance questionnaire inquiring about the effects of the training needs assessment program of the employees involved. The employees will be asked for their thoughts about the program, on how the training improved their skills, what they have learned, what they have not learned, and other important aspects that may help determine the impact of training needs assessment on employee performance.

The pilot study will be useful to test if the questions above are clear and understandable in order to detect weakness in design.

2. Final Questionnaires

After identifying whether each questionnaire is valid, reliable, and in a good understandable layout, the final draft of both questionnaires can be created in the final format with an attached letter asking the participant to participate in this study. We will develop, for the purpose of our design methodology, a final questionnaire format that can be used by the future researcher to collect the data from the samples and test the hypotheses questions. Appendix A and Appendix B will have the final developed questionnaire.

D. DATA INSERTION TEMPLATES

This section will demonstrate some recommended ways of building the data templates based on the questionnaires explained previously in the introduction of this chapter.

1. Training Needs Assessment Comprehension Results

The first research question will guide the study to address the degree to which training needs assessment may lead to positive employee performance. In order to determine this, a TNA Comprehension Scale will be used in a survey to determine the comprehensiveness of training needs assessment on different organizations in Bahrain. The final results in this section are then compared with the possible outcomes and results of the Employee Performance Scale.

To address this question, the responses of the participants or the samples can be analyzed using descriptive analysis to determine the frequency, average mean, and how far from the mean the distribution of the data lies, or what is called the standard deviation. The total mean for each statement will be computed to determine if the overall responses describe the organization as comprehensive in their training needs assessment programs.

Data can be compiled for assessment in different tables. Tables can be used to assess the number of male and female managers participating in the study, the frequency of males versus females, and the percentage for each group (Table 2). Another table

could be used to present the age frequency of the managers who will participate in the study, and we can present the percentage of the age categories based on the results we receive from the participants (Table 3). Data on level of education can also be measured to present the frequency of manager's graduate level (Table 4). Finally, the years of service could also be another factor for the statistical comparison for the available data (Table 5).

Table 2. Manager Gender Frequency

Gender	**Frequency**	**Percentage**	**Cumulative Percentage**
Female			
Male			
Total			

Table 3. Manager Age Frequency

Age	**Frequency**	**Percentage**	**Cumulative Percentage**
21–25			
26–30			
31–35			
36–40			
41+			
Total			

Table 4. Manager Level of Education

Degree	**Frequency**	**Percentage**	**Cumulative Percentage**
Bachelor's degree			
Master's degree			
Higher			
Total			

Table 5. Manager Years of Service Frequency

	Frequency	**Percentage**	**Cumulative Percentage**
1–4			
5–8			
9–12			
13			
Total			

Table 6 presents the descriptive results on the Training Needs Assessment Comprehensiveness questionnaire. The results should be analyzed using the weighted means of the data.

Table 6. Training Needs Assessment Comprehensiveness Scale

	N	**Mean**	**Standard Deviation**
1. Before considering training, we carefully assessed if the problem could have been somewhere else (such as the work environment, the tools, reward systems).			
2. The job description of the employee's job was reviewed prior to deciding on the training program to be undertaken by the employee.			
3. Training was consciously linked to the company's strategic plans.			
4. We decided on the desired competency level we expected an employee to reach after training.			
5. We determined the knowledge, skills and attitudes an employee must have in order to perform the job successfully.			
6. The job-related competency requirements were ranked according to their importance.			
7. The current skill/competency level of employees was assessed prior to deciding on the training program to be undertaken by the employees.			
Total mean			

Source: Van Eerde et al. (1999, p. 73).

The first column will have the questions that the manager has to answer for the proposed study. The second column will have the total count of the respondents represented by *N,* and we can use the function in Excel =*count* to calculate the total number. The third column is the mean or the average number of the respondent's responses. It can be calculated as the total sum divided by the N, or we can use the

function =*average* in Microsoft Excel. The last column is the standard deviation, or how far are the deviations from the mean. It can be calculated mathematically, or we can use the function =*stddev.s* in Microsoft Excel to calculate the sample standard deviation.

2. Employee Performance Survey Results

The Employee Performance Survey could describe the degree to which training needs assessment may lead to positive employee performance. Data on employee performance is also necessary to determine if training needs assessment comprehensiveness has significant positive relationship with employee performance.

Tables can be created to present the demographics for the number of male and female employees in the study, the frequency of males versus females, and the percentage for each group (Table 7). Another table could be created to present the age frequency of the employees who will participate in the study, and we can present the percentage of the age categories based on the results we receive from the participants (Table 8). Level of education can also be measured to present the frequency of employee's level (Table 9). Finally, the years of service could also be another factor for the statistical comparison for the available data (Table 10).

Table 7. Employee Gender Frequency

Gender	**Frequency**	**Percentage**	**Cumulative Percentage**
Female			
Male			
Total			

Table 8. Employee Age Frequency

Age	**Frequency**	**Percentage**	**Cumulative Percentage**
21–25			
26–30			
31–35			
36–40			
41+			
Total			

Table 9. Employee Level of Education

Degree	**Frequency**	**Percentage**	**Cumulative Percentage**
Bachelor's degree			
Master's degree			
Higher			
Total			

Table 10. Employee Years of Service Frequency

	Frequency	**Percentage**	**Cumulative Percentage**
1–4			
5–8			
9–12			
13			
Total			

Table 11 shows the mean distribution on each employee performance statement. The results should be analyzed using the weighted means of the data.

Table 11. Employee Performance Assessment

	N	**Mean**	**Standard Deviation**
1. Gained new knowledge			
2. Improvement in overall performance as an employee			
3. Gained confidence in skills and capabilities			
4. Felt motivated and empowered			
5. Received more compliments from supervisor			
6. Better results in employee evaluation tests			
7. Improvement in skills			
Total mean			

The first column will have the questionnaire questions that the employees have to answer for the proposed study. The second column will have the total count of the respondents represented by *N,* and we can use the function =*count* in Excel to calculate the total number. The third column is the total summation of the provided numerical data. We can use Microsoft Excel to calculate all the provided data by using the function =*sum* and then highlighting all the needed data, or we can do it mathematically. The fourth column is the mean or the average number of the respondent's responses. It can be calculated as the total sum divided by the N, or we can use the function =*average* in Microsoft Excel. The last column is the standard deviation, how far the deviations are from the mean. It can be calculated mathematically or we can use the function =*stddev.s* in Microsoft Excel to calculate the sample standard deviation.

E. REGRESSION ANALYSIS

In order to examine the relationship between groups of variables, a covariance or a correlation technique can be used. For our proposed study, we need a tool to investigate the relationships between the quantitative variables, so that we can focus on creating a model that relates the variables together when possible. The regression analysis is a "collection of statistical tools that are used to model and explore relationships between variables that are related in a non-deterministic manner" (Montgomery & Runger, 2014, p. 428).

Defining the variables is the first step toward examining the relationships and posing possible conclusions. The first variable is the dependent variable, not in our control but critical to understand, usually noted by Y in the mathematical equations. In order to understand the dependent variable, it should be related to another set of variables that are under our control, referred to as the independent variables or the explanatory variables noted by X. The line equation is mathematically represented as $y = \beta 0 + \beta 1x +$ epsilon or the error (Dixon, Statistics class handouts, Naval Postgraduate School, 2015).

We can use the multiple linear regression tool when there are numerous dependent variables in the situation we are studying or trying to relate the cause for. For the proposed TNA study, we can relate each statement of the Training Needs Analysis Comprehensive Scale to all the self-developed employee performance questionnaires and examine whether any of them have a significant relationship with each other. Using the Microsoft Excel regression function tool from the data analysis menu will allow us to present the output summary of the relationship between the variables.

The regression function will explain if the dependent variable is best explained by the model or by the set of independent variables. Using the Data Analysis Tools in Microsoft Excel will generate the tables automatically once we enter the data correctly (Figure 2).

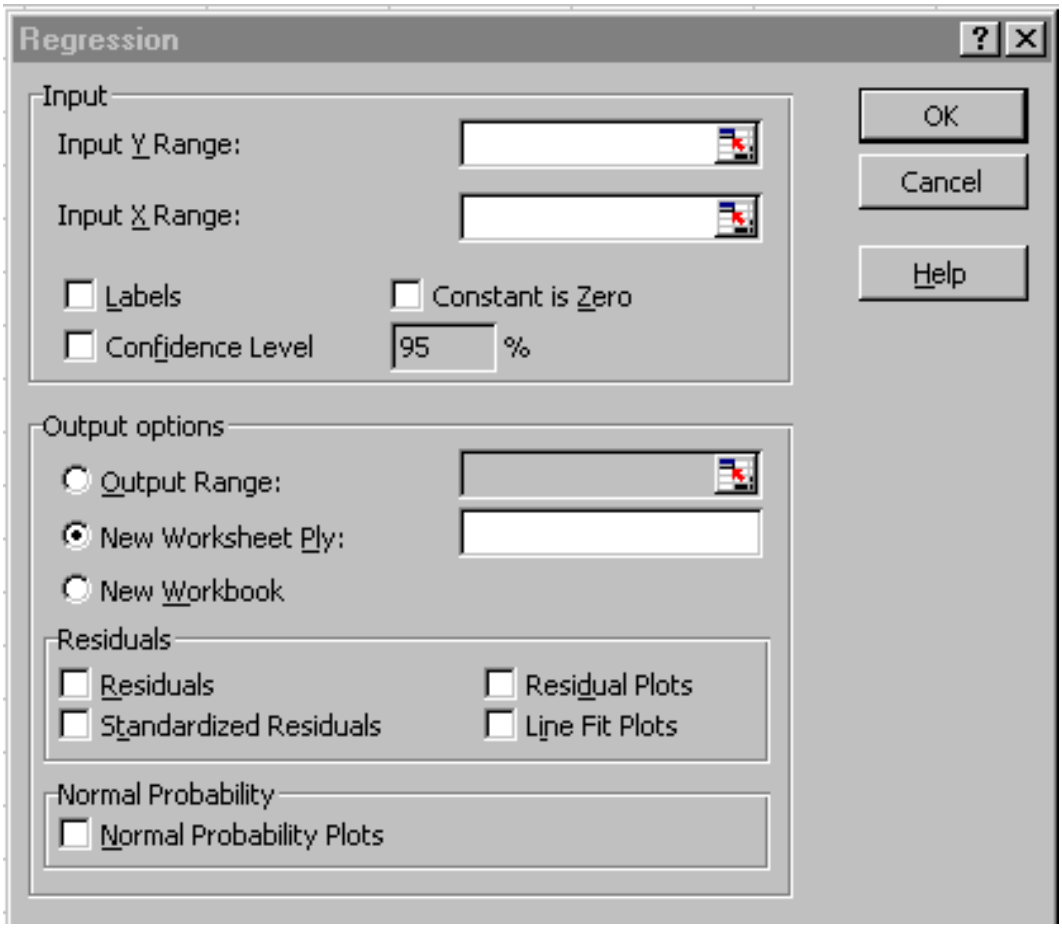

Figure 2. Regression Data Entry Microsoft Excel

The regression statistics output table will show the *R square* values that preset the coefficient of determination or the proportion of variation in the dependent variable explained by the model (Dixon, Statistics class handouts, Naval Postgraduate School, 2015). The *standard error* presents the standard deviation of the observation about the line of average values. The second table output or the *ANOVA* has an important area of interest as well, which is the significance *F*. The significance *F* value will decide if the hypothesis or the null hypothesis, as explained by the model, depends on the value of *Alpha* or the significant level usually set to 5%. The closer the significance *F* to zero value, the more we reject the null hypothesis and assume the overall model is significant. The final table of the regression function will show each variable's significance. The *P-value* of each independent variable will reveal if the independent variable is significant or

not, and whether it is depends on the value in comparison to the *Alpha* value. Figure 3 is an example of how the regression summary would look after we insert the dependent and the independent variables correctly.

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.89959
R Square	0.80926
Adjusted R Square	0.80628
Standard Error	3.43524
Observations	392

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	6	19275.646	3212.608	272.234	3.7923E-135
Residual	385	4543.347	11.801		
Total	391	23818.993			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	-14.53525	4.76388	-3.05114	0.00244	-23.90174	-5.16876
Var 1	-0.32986	0.33210	-0.99324	0.32122	-0.98282	0.32311
Var 2	0.00768	0.00736	1.04359	0.29733	-0.00679	0.02214
Var 3	-0.00039	0.01384	-0.02828	0.97745	-0.02760	0.02681

Source: (Dixon, Statistics class handouts, Naval Postgraduate School, 2015).

Figure 3. Summary Example of What the Regression Result Would Look Like

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V. CONCLUSION

Business environments are changing continuously, owing to a host of reasons like new competitors entering the market, shifts in supply and demand, etc., and proficient organizations are required to adapt quickly to these changes in order to stay in competition. Not a single organization or company in today's world aims to nurture inefficiency; rather, they endeavor to optimize output with minimum possible input. Adapting to a changing environment and maintaining efficiency, however, are easier said than done, as they would require not only effective and efficient evaluation systems to be in place but also proficient staff to optimize output in respective fields, and above all the resources. Notwithstanding the fact that training may be the solution to most of the challenges faced by any organization, the need remains to correctly assess the level of proficiency of the managers and employees, because random assessment of training needs may lead to waste of precious resources and time. Therefore, correct assessment of training needs is the key, and TNA is one of the most essential aspects of the evaluation process, prior to conduct of any training activity.

A further step is to identify whether TNA and employee performance have a positive relationship or not. The perceived association between TNA and employee performance is what motivated the research. Several studies, specifically those conducted by Van Eerde et al. (2008), Patton and Pratt (2002) and Denby (2010), helped establish a positive relationship between the two variables. The evidence, however, only points to the impact of training needs assessment on actual training practices rather than on the outcome of the training. Several intervening factors such as politics and culture may affect the outcome of the training needs assessment and may lead to no specific improvements (Clarke, 2003). The vulnerability of such programs on self-interest, conflict and power relations may put the reliability and validity of data presented for training assessment into question (Clarke, 2003; Al Bahar et al., 1996).

The background of the problem discussed how TNA can affect an employee's performance positively or negatively. Several studies confirmed the positive impact of TNA. The study of Al Bahar et al. (1996), however, suggested that the Arab culture may interfere with its effectiveness as decisions are sometimes made with social rationale factors.

In order to obtain correct feedback from the managers and employees, and to validate it, we are proposing a research methodology to evaluate the degree to which TNA affects positive employee performance, specifically in the context of Bahrain. The study design is quantitative in nature, to investigate via statistical tools, proposing a research methodology including a survey of different organizations in Bahrain. Based on this study, future researchers can build and conduct the survey and run statistical correlation to evaluate the degree to which TNA affects positive employee performance. A dependent and independent variable will be set to be able to run a statistical relationship. The independent variable will be the TNA and the dependent variable will be the employee productivity of those who will be selected for training through training assessment. As an outcome of this study, managers and employees from different organizations in Bahrain could be surveyed as the respondents for the study.

Two research questions are explored in the study. The first questionnaire is based on the literature review, and the second is a self-designed Employee Performance Questionnaire that focuses on the degree to which TNA may lead to positive performance and the extent to which the two variables are significantly related. The reason for the survey is to address the respondents' perceptions, based on their experiences, and the impact of TNA on employee performance.

Therefore, in order to avoid limiting the feedback from a single organization and from managers only, we recommend that a number of managers and employees from two different organizations in Bahrain participate in the project. Each organization has to be contacted through official channels. Upon agreement, the questionnaires shall be sent through the communication channel selected to the respective human resources departments, which would distribute the questionnaires to the specific respondents.

We chose Internet-based communication (email, video conference, etc.) as our preferred method of communication for the proposed study. We assume that it will not only be easy for the respondents to handle, it will also maintain their confidentiality. Email is the appropriate method due to factors like presence of targeted population in different regions, easy to maintain records, and no associated cost, which makes it the best way to communicate for this proposed study.

In the construction of the email content to be sent out for our target population in our proposed study, it is necessary to invite the participant in a polite way to participate in the survey questionnaire and explain the reason behind the proposed study, stating that the final outcome of this study could improve their experience at respective organizations. Furthermore, it is important to state that the information received from the participants would be confidential, and let them know that there are no penalties if they decide not to participate.

To increase reliability and validity of the survey questionnaires, we recommend conducting a pilot study before the administration of the actual survey for better feedback on the survey. The pilot study will be useful to test if the questions above are clear and understandable in order to detect weakness in design.

After establishing the validity and reliability of the questionnaire through the feedback on the pilot study, the final draft of the questionnaires can be amended. Our proposed final questionnaire format that can be used by the future researchers is attached as Appendix A and Appendix B.

The first research question will address the degree to which training needs assessment may lead to positive employee performance, and we recommend the use of TNA Comprehension Scale in a survey to determine the comprehensiveness of training needs assessment on different organizations in Bahrain. The final results in this section are then compared with the possible outcomes and results of the Employee Performance Scale.

To address this question, we propose that the responses of the participants or the samples can be analyzed using descriptive analysis to determine the frequency, average

mean, and how far from the mean the distribution of the data lies, or what is called the standard deviation. The total mean for each statement will be computed to determine if the overall responses describe the organization as comprehensive in their TNA programs.

The Employee Performance Survey could describe the degree to which training needs assessment may lead to positive employee performance. Data on employee performance is also necessary to determine if training needs assessment comprehensiveness has significant positive relationship with employee performance.

In order to examine the relationship between groups of variables, a covariance or a correlation technique can be used. For our proposed study, regression analysis is the recommended statistical tool. We can use multiple linear regression tools when there are numerous dependent variables in the situation we are studying or trying to relate the cause for. Using the Microsoft Excel regression function tool from the data analysis menu will allow us to present the output summary of the relationship between the variables. The regression function will explain if the dependent variable is best explained by the model or by the set of independent variables.

Since this is a proposed research methodology and we are not conducting the actual surveys, we have to keep our fingers crossed to see future results. Actual results will help to determine the validity of our hypotheses.

The time delay in approval of such survey-based studies through the Institutional Review Board (IRB) process is one of the major limitations that forced us to re-model and re-design our project. Nonetheless, future researchers are at liberty to amend, revise, improve and proceed with further research as they deem appropriate.

APPENDIX A. TRAINING NEEDS ASSESSMENT COMPREHENSION QUESTIONNAIRE

A. Demographic Information

1. Name: _____ 2. Age: _____

3. Gender: _____ 4. Level of Education: _____

5. Date of Employment: _____

B. Please choose your best answer from "definitely not" to "definitely."

1. Before considering training, we carefully assessed if the problem could have been somewhere else (such as the work environment, the tools, or the reward systems).

a. Definitely Not

b. No

c. Uncertain

d. Yes

e. Definitely

2. The job description of the employee's job was reviewed prior to deciding on the training program to be undertaken by the employee.

a. Definitely Not

b. No

c. Uncertain

d. Yes

e. Definitely

3. Training was consciously linked to the company's strategic plans.

a. Definitely Not

b. No

c. Uncertain

d. Yes

e. Definitely

4. We decided on the desired competency level we expected an employee to reach after training.

a. Definitely Not

b. No

c. Uncertain

d. Yes

e. Definitely

5. We determined the knowledge, skills and attitudes an employee must have in order to perform the job successfully.

a. Definitely Not

b. No

c. Uncertain

d. Yes

e. Definitely

6. The job-related competency requirements were ranked according to their importance.

a. Definitely Not

b. No

c. Uncertain

d. Yes

e. Definitely

7. The current skill/competency level of employees was assessed prior to deciding on the training program to be undertaken by the employee.

a. Definitely Not

b. No

c. Uncertain

d. Yes

e. Definitely

Thank you very much for your participation!

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APPENDIX B. EMPLOYEE PERFORMANCE QUESTIONNAIRE

A. Demographic Information

1. Name: _____ 2. Age: _____

3. Gender: _____ 4. Level of Education: _____

5. Date of Employment: _____

B. The statements below inquire on the possible benefits gained from training. Please choose your best answer from "strongly disagree" to "strongly agree."

1. Gained new knowledge
    a) Strongly Disagree
    b) Disagree
    c) Uncertain
    d) Agree
    e) Strongly Agree

2. Improvement in overall performance as an employee
    a) Strongly Disagree
    b) Disagree

c) Uncertain

d) Agree

e) Strongly Agree

3. Gained confidence in skills and capabilities

a) Strongly Disagree

b) Disagree

c) Uncertain

d) Agree

e) Strongly Agree

4. Felt motivated and empowered

a) Strongly Disagree

b) Disagree

c) Uncertain

d) Agree

e) Strongly Agree

5. Received more compliments from the supervisor

a) Strongly Disagree

b) Disagree

c) Uncertain

d) Agree

e) Strongly Agree

6. Better results in employee evaluation tests

Strongly Disagree

a) Disagree

b) Uncertain

c) Agree

d) Strongly Agree

7. Improvement in skills

a) Strongly Disagree

b) Disagree

c) Uncertain

d) Agree

e) Strongly Agree

Thank you very much for your participation!

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